

## NEW DESCRIPTIONS

### *DEMANIA SHYAMASUNDARII*, A NEW SPECIES OF CRAB (DECAPODA : BRACHYURA) FROM THE WALT AIR COAST OF BAY OF BENGAL<sup>1</sup>

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(With nine text-figures)

#### INTRODUCTION

The diagnostic characters of the genus *Zoerymus* Leach were given by Alcock (1898). Alcock (1898) also gave the key to the Indian species of *Zoerymus* and described them. Although the present species bears some resemblances to *Zoerymus aeneus* (Linn.), detailed study revealed that it belongs to the genus *Demania* Laurie, 1906. Laurie (1906) gave the diagnostic characters of the genus *Demania* and cited its differences from those of *Zoerymus*. He then described a new species, *Demania splendida*, collected by Herdman (1902) at Ceylon (Sri Lanka). In 1969, Guinot revised the genus *Demania* and described a new species. Later, in 1979, Guinot gave the diagnostic characters for all the eight species so far described.

*Demania shyamasundarii* sp. nov.

**Holotype:** Male – breadth 30 mm, length 19 mm, front 9 mm.

**Paratypes:** (1) Female, breadth 24 mm, length 18 mm and front 7 mm. (2) Female, breadth 29 mm, length 17 mm and front 7 mm. (3) Female, breadth 27 mm, length 17 mm and front 7 mm. (4) Female, breadth 24 mm, length 17 mm and front 7 mm. (5) Male, breadth 29 mm, length 18 mm and front 7 mm. (6) Male, breadth 27 mm, length 17 mm and front 7 mm. (7) Male, breadth 29 mm, length 19 mm and front 8 mm. (8) Male, breadth 35 mm, length 21 mm and front 9 mm. (9) Male, breadth 29 mm, length 19 mm and front 8 mm. (10) Male, breadth 28 mm, length 19 mm and front 7 mm.

**Average measurements:** Breadth 29 mm, length 17 mm and front 7 mm.

Collected at offshore fishing station, Visakhapatnam during 1979-1980. The holotype and

paratypes are now in the Zoology Museum of Andhra University, Visakhapatnam. They will be deposited in the Museum of Zoological Survey of India, Calcutta.

**Colour during life:** Carapace and chelipeds brick-coloured, legs white with brick-coloured spots, lobules of carapace with white ocelli. In formalin it is creamy white in colour and the white ocelli have disappeared.

Anterior half of the carapace including front forms a semi-circular outline. Antero-lateral borders convex, postero-lateral borders straight and convergent, posterior border slightly concave.

Carapace convex at the centre from side to side but flat at the posterior region. Regions are well marked by the grooves and each region is subdivided into lobules by similar grooves. The grooves deep, smooth, without any ornamentation but covered by pubescence. The lobules smooth, polished but dimpled, the lobules distinct and somewhat bulging; in the posteriormost region of the carapace, the lobules are numerous, small, like large tubercles (Fig. 1).

Front clearly demarcated and divided into two distinct lobes by a central groove. Anterior border of frontal lobes slightly oblique, almost at the same level of the orbits, its breadth almost about one-fourth of the greatest breadth of the carapace.

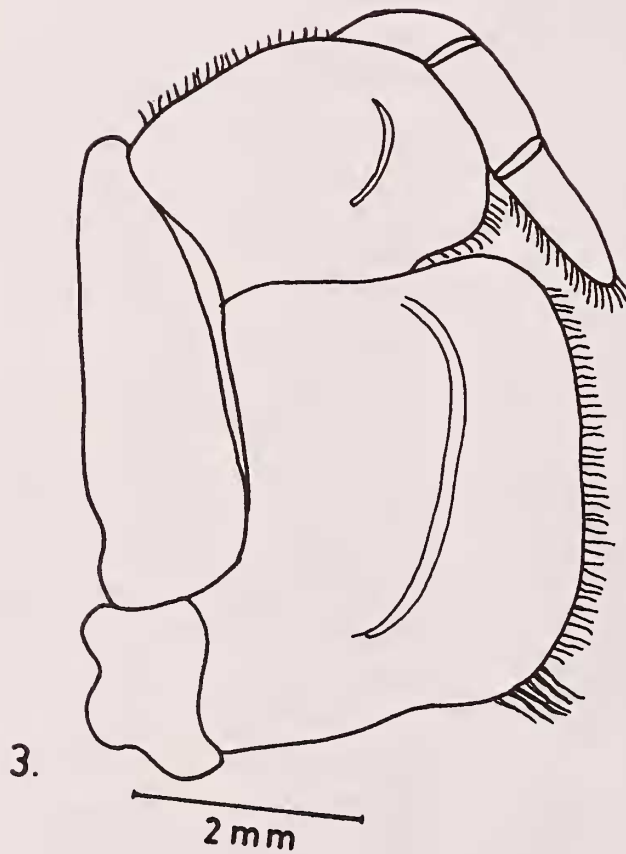
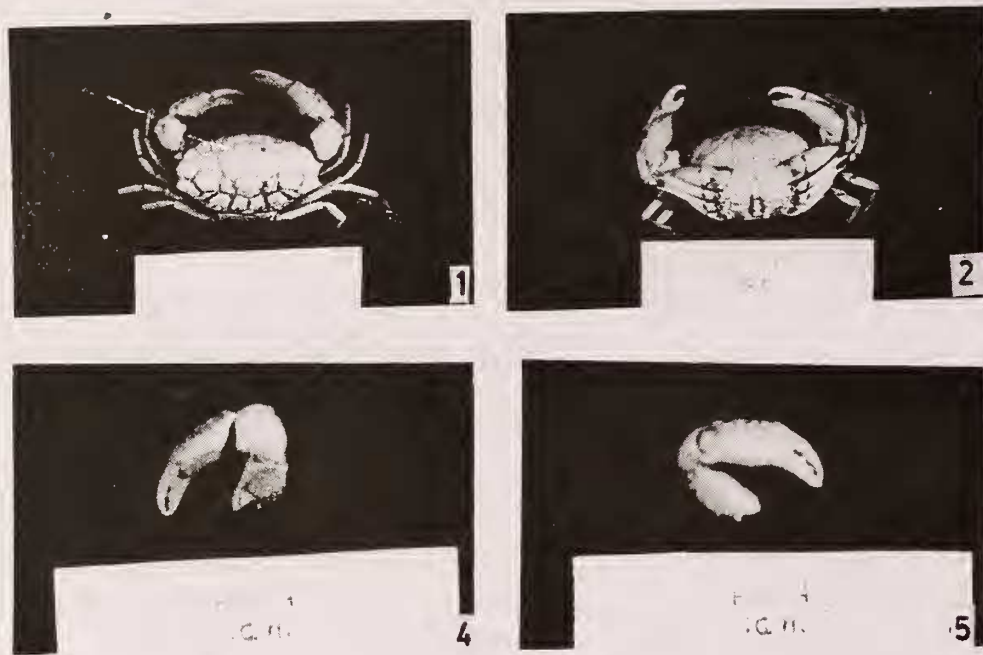
Frontal breadth ÷ Carapace length ( $9 \div 19$ ) = 0.47  
Length of frontal lobe (inner border) ÷ frontal breadth ( $2 \div 8$ ) = 0.25

Orbital border smooth, tumid. There are three fissures on the upper border, one at the middle, the second between front and inner angle of orbit, the third between first antero-lateral lobe and outer angle of the orbit. Eyes pale brown, on short thick stalks.

The antero-lateral border convex forms an angle with postero-lateral border, divided into four lobes by grooves. First two lobes smaller than the last two lobes. The grooves distinct, border of lobes

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Figs. 1-5. *Demania shyamasundarii* sp. nov.

1. Dorsal view, 2. Ventral view, 3. Third maxilliped (right side), 4. Chelate leg (under surface), 5. Chelate leg (upper surface),



TABLE 1  
DIFFERENCES BETWEEN *Dermania splendida* LAURIE AND *D. shyamasundarii* SP. NOV.

| <i>Dermania splendida</i> Laurie, 1906   | <i>Dermania shyamasundarii</i> sp. nov.   |
|--|---|
| 1. Lobules of smooth and polished.   | Lobules of carapace smooth, polished but dimpled.   |
| 2. Front considerably produced, forming two prominent, bluntly pointed lobes.  | Front divided into two distinct lobes which are at the same level of the orbit, without forming any pointed lobes.                    |
| 3. Fissures on upper border of orbit, one a little to outer side of middle point of upper border, the other two in the neighbourhood of the outer angle. | One at the middle, second between front and inner angle of orbit, and third between outer angle of orbit and first anterolateral lobe |
| 4. Undersurface of carapace smooth, polished and lobulated   | Undersurface of carapace rough, with granules.  |
| 5. Hairs on inner border of ischium and merus not present in the illustration given by Laurie (1906). Surface of external maxillipeds polished.          | Inner border of ischium and merus bears small hairs. Surface of external maxillipeds polished but with some dimples.                  |
| 6. Transverse grooves of hand crossed by two longitudinal grooves.   | Transverse grooves of hand are traversed by three longitudinal grooves.   |
| 7. Inner anterior angle of wrist with a tooth, to the inner side of which is a much smaller one.   | Inner anterior angle of wrist with a tooth, smaller tooth not seen.   |
| 8. Regular pubescent groove running along proximal portion of upper surface of dactylus.   | This groove is not seen on the surface of the dactylus  |
| 9. Crest present on dorsal borders of uropodite, carpopodite and propodite   | Crest absent  |
| 10. Propodite of 4th walking leg foliaceous.   | Propodite of 4th walking leg not foliaceous, but similar to other walking legs.   |
| 11. Tuft of hairs on dorsal border of proximal portion of meropodite of each walking leg.  | Tuft of hairs absent on dorsal proximal portion of meropodite.  |
| 12. The figure of first pleopod of male given by Guinot (1979), has no long hairs on both borders.   | A short distance below the tip, both borders bear long hairs.   |

smooth convex, surface dimpled. There is an indication that anteriorly it continues below the inner border of the orbit, to the anterior external angle of the buccal cavern. Undersurface of carapace rough, with minute granules. Pubescence at the base of chelate legs and pereopods.

Thoracic sternal region on either side of the abdomen is broken by pubescent grooves into regions similar to the segments bearing the chelipeds and pereopods. Surface polished but has some dimples (Fig. 2).

Basal antennal joint short, present in the inner orbital angle, its inner angle touches the downward growth of the front and outer angle juts into the orbital hiatus. Flagellum short, lying in the orbital hiatus and smaller than the diameter of the orbital hiatus.

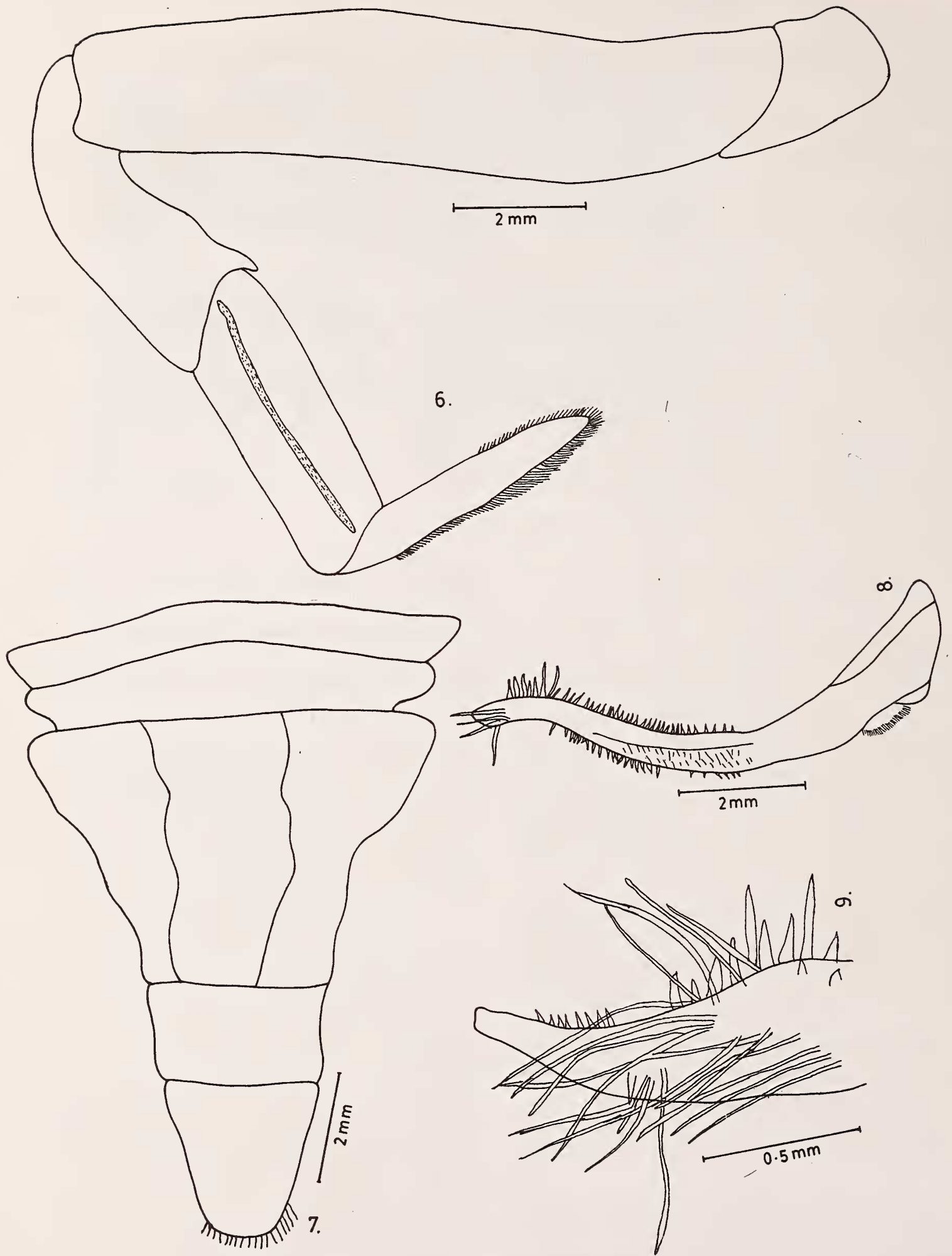
Antennules fold obliquely, forming an angle of 40° (approximately) with a horizontal line. Interannular septum broad. Merus of third maxilliped is as broad as the ischium. But the length of the merus is half that of ischium. A longitudinal furrow traverses

the ischium; this is less distinct on the merus. The inner borders of ischium and merus bear hairs. The inner border is oblique, bent backward, surfaces of ischium and merus polished but have some dimples. Flagellum arises from the apex and extends up to the anteriormost region of the ischium (Fig. 3).

Outer border of pterygostome serrated.

Chelipeds of equal size in female but the right slightly larger in male.

The upper surface of the wrist and hand have transverse grooves and bear large tubercle-like structures arranged transversely. The transverse grooves of hand are traversed by three not so deep longitudinal grooves, one extending to the base of the movable finger, the second to the base of the interdigital cleft and the third to the base of the immovable fingers. The upper surface of arm shows two transverse grooves—one deep groove below its anterior end, and the second (which is not so deep) below the first. Undersurface of the arm smooth, concave in correlation with the convex undersurface of the carapace (Fig. 4). The upper border of arm has



Figs. 6-9 *Demania shyamasundarii* sp. nov.  
6. Last walking leg (left side), 7. Abdomen (male), 8. First pleopod of male, 9. Tip of first pleopod of male.



three blunt teeth and is lined by short hairs. The greatest breadth and length of the upper surface of wrist are almost equal. At the inner anterior angle is a large tooth. The inner border of hand has six large tubercles extending from the junction of wrist and hand to base of the movable finger (Fig. 5). Fingers have blunt tips. The immovable finger has four teeth which fit into the concavities of the movable fingers which has the same number of teeth. At their base there is a gap but at their tip the first two teeth fit tightly into the concavities when the fingers are shut.

Walking legs flattened laterally. The surface of all the walking legs polished. The length of the walking legs decreases gradually from first to last leg. A faint longitudinal groove is present in the middle of both surfaces of the propodus of all legs. Small dimples present on the polished surface of the walking legs. Dactylus is narrower than the remaining segments and tapers gradually towards the tip. The upper border of dactylus is bordered by hair throughout but the hairs extend only from the middle to the tip on the lower border (Fig. 6).

In the male, abdomen has five segments only, 3rd to 5th segments being fused to form a composite segment. Along the composite segment run two longitudinal grooves. The sixth segment is broader than long, triangular, tip rounded and bordered by hairs. Abdomen of female has seven segments; length of the segments increases gradually from first to seventh. Seventh triangular, with round tip. Two faint longitudinal grooves extend from first to sixth

segments (Fig. 7). Abdomen is well fringed with hair. The groove covered by the abdomen is finely granular.

First pleopod of male stout, long and curved in the middle (Fig. 8). Tip is blunt and bare. Below the tip both borders have long hairs, and the inner border also bears spines (Fig. 9).

#### DISCUSSION

The present species shows some similarities with *Zozymus aeneus* (Linn.) and *Demania splendida* Laurie, 1906, but has a closer resemblance to the latter.

The similarities are: (1) Antero-lateral borders of carapace convex, (2) posterior border of carapace concave, (3) lobules of carapace smooth, (4) structure of upper border of orbit, (5) thoracic sternal region, (6) folding of antennules, (7) general structure of external maxilliped, and (8) structure of the chelipeds. The differences are shown in Table 1.

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